

# The Choice and Use of **PHOTOGRAPHIC PRINTING PAPERS**

Explaining the special advantages of the different printing papers of today, and telling how to use them to get good pictures from your negatives. Practical methods. Pictures by Miss May L. Smith.

# The Photo Miniature

VOLUME XIII : OCTOBER, 1916 : NUMBER 154

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## A Letter to the Editor: and a Few Prints which Speak for Themselves

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“MY DEAR Mr. Tennant,  
IT IS a year  
SINCE I received  
YOUR LETTER, saying  
YOU WOULD like to  
REPRODUCE our 1915  
SALON PRINT,  
AND I am ashamed  
THAT ALL this time  
HAS ELAPSED  
WITHOUT MY sending it,  
OR ANSWERING your letter:  
BUT I was busy  
AT THE time and  
NEGLECTED IT,  
LAYING THE letter aside  
AND IT did not

P. T. O.

COME TO light for  
A LONG time.  
YOU KNOW how these  
THINGS HAPPEN.  
I SEND it with  
OUR 1916 salon print,  
AND A few others  
AND HOPE they will  
BE ACCEPTABLE for  
REPRODUCTION in the  
PHOTO-MINIATURE which  
AS I have already  
TOLD YOU  
WE ALWAYS find  
VERY INTERESTING. Yours  
VERY TRULY,  
MAY L. SMITH, Binghamton,  
N. Y. September 29, 1916."

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With apologies to K. C. B. of "The New York American"





Salon 1915  
May L. Smith



"Oh wind ablowing all day long,  
Oh wind that sings so loud a song."  
May L. Smith



Home Portrait  
May L. Smith



"If a girl has charm, she needs nothing else;  
but if she has no charm, nothing else is of any use"  
May L. Smith



Portrait  
May L. Smith





Salon 1916  
May L. Smith

# The Photo-Miniature

*A Magazine of Photographic Information*

EDITED BY JOHN A. TENNANT

Volume XIII

OCTOBER 1916

Number 154

## Photographic Printing Processes

The outstanding fault in photographic practice to-day is our lack of appreciation of the print. We willingly put ourselves to endless trouble and expense in the choice of lens and shutter, in the selection of the right plate for the subject, in the arrangement of the subject itself, and in getting just this or that effect in the negative. But there our interest seems to end, and we are careless of the print, content to take what the commercial finisher or printing-room gives us without question, save that the print must be bright and snappy or soft and mushy, as the case may be. This is all wrong. The print is the thing about which we should bother: the most significant of photographic facts—the first intention and the last end of all our photography. Strange, is it not, that the professional should forget that it is the print upon which his patrons base their judgment of his abilities, on which in turn his reputation and prosperity depend! Stranger still that the amateur should overlook the fact that it is the print which sums up all his labor of love, is all that he has to show for his pains and expense! But it is true. They forget and they overlook, and one rarely sees, except at an exhibition or in the portfolios of an old-fashioned pictorialist, prints which compel our admiration as prints, while assuring us that they give us all the photographer intended us to see as his interpretation of the subject.

**The Print:  
the Last Word** In proof of this, if you are an amateur, look over your prints in bulk, and see if they are not mere proofs, showing what you got by this or that exposure. Or, if you are a professional, look over the prints being made ready for the day's deliveries, and see whether they are not just plain and unvarnished transcripts from the negatives you happened to get of your subjects. Which, as I have already said, is all wrong. In truth, the print should carry out and sum up, as in a last word, your characterization or rendering of the subject.

**Getting Back  
to First  
Principles** In this reformation of practice, this getting back to first principles, there must first be thought, the resurrection of old ideals, the cultivation of a finer perception and appreciation of the part played by the print, and then a practical knowledge of methods. The reader must know what he wants, and then how to get it. The first comes by observing and thinking, which every man must do for himself; the second, in part at least, may be gained by a careful reading of this little book and much patient experiment therein. Among the printing processes here to be discussed the reader will find abundant room for selection according to his need or taste.

**Three Earlier  
Processes** The past ten years have witnessed a revolution in photographic printing methods. Aforetime we had albumen paper, carbon or pigment tissues, and platinotype papers. The first, almost universally used, gave glossy prints with great fineness of detail and agreeable purplish brown tones. It was slow in yielding prints, the image printing out during the long exposure required. The second gave prints of notable richness and substance, semi-matt and varied in color according to the pigment tissue employed. Its manipulation was made needlessly complicated and tedious, but the prints had an absolute permanency to which albumen prints could not lay claim. The third gave black-and-white prints, resembling drawings, on matt or rough surfaced papers, and, like carbon prints, possessing assured permanence.

**Bromide  
Paper**

Then came bromide paper, giving black-and-white prints resembling platinotypes, but much more rapid in printing than any earlier paper known, calling for exposures in seconds instead of minutes or half-hours, and cheaper in price, but lacking the assured permanence of platinotype. Because of its rapidity and its capacity for giving prints in an agreeable "sepia" color, it quickly found its place as the paper most suitable for making enlargements or large prints, for which it is today generally employed.

**Print-out  
Papers**

New varieties of print-out-papers—gelatine and collodion silver chloride emulsions—followed in the endeavor to replace albumen paper with its tedious manipulation. These quickly became popular for general contact printing and survive in the Solio, Aristo, Paget, Ilford and in the self-toning papers of today.

**Development  
Papers**

Finally came what at first were called gaslight but are now generally known as development papers, invented by Dr. Leo Baekelandt, giving prints rivaling albumen at its best but "five hundred times more rapid" according to the first announcements.

**What They  
Are**

These development papers are coated with washed chloride of silver emulsions and so are less rapid than bromide papers, but give prints with exposures of from one to ten seconds in artificial light, and are now obtainable in a hundred different varieties of surfaces, finishes, weights, etc. Normally they give black-and-white prints by development of the invisible image secured by exposure; but they may be "toned" or "redeveloped" to give brown or sepia prints or may be had in a special variety giving green prints suitable for some outdoor subjects.

**Their  
Popularity**

The use of development papers has become universal, 70 per cent of all the prints made today being on these papers. Their manipulation has been systematized to a remarkable degree; they offer remarkable facilities for the modification of the qualities of the negative in making the print and the prints are reasonably permanent.

In the choice of a printing-paper these development papers naturally call for first consideration. There are so many varieties, and these differ so widely in almost every detail, that for general use there is little need to look farther. They are everywhere obtainable in any desired size, ready for instant use, and reasonable in price. By choice among the different grades and varieties one may select a paper exactly suited to any particular negative, i. e., a paper which will give the most pleasing print possible from the negative. Or, contrariwise, one may select a paper which will enhance, modify, or suppress what is desirable or otherwise in any particular negative. To this elasticity, combined with their simplicity of manipulation and persistent advertising, the present-day popularity of development papers is undoubtedly due. It is difficult to see wherein they could be improved.

**Manipulation  
Outlined**

Briefly, the making of a development-paper print may be outlined as follows: The paper, being less rapid than bromide paper, may be handled safely in any weak artificial light, as in the shadow of one's body at 10 feet distance from gaslight or an incandescent bulb. This makes for great convenience in printing, doing away with the necessity of darkrooms or special printing-rooms. In such a light then, the paper is placed in contact with the negative in the usual printing-frame, and exposed at say, 10 inches from the light-source for from four to fifty seconds, according to the character of the artificial light used, the variety of paper, and character of the negative employed. After exposure the print (no image being visible) is immersed, face down, in almost any modern developer of the metol-hydroquinone type. The image appears in a few seconds and development is continued until the desired strength and detail are secured. The print is now quickly rinsed in clear water (or placed in a "stop" bath, usually composed of acetic acid and water, to arrest development), after which it is fixed by immersion for not less than ten minutes in an acid-hypo fixing-bath, and finally washed in running water for half an hour. The perfection of the print and its permanency depend upon



correct exposure, thorough development in fresh developer, and thorough fixing and washing.

This brief outline, of course, must be varied according to the maker's instructions accompanying each different brand or variety of paper. To summarize these variations in manipulation would require more than a hundred closely packed pages and so cannot be attempted here. The reader who would master the possibilities and use of development papers is therefore referred to the booklets and working instructions for these papers published for free distribution by the manufacturers. As an instance of the fullness of the information so obtainable about any special make of development paper, I may say that any one of the Velox, Artura or Cyko booklets would occupy a whole number of THE PHOTO-MINIATURE series.

The following list of these papers, compiled for the information of the reader rather than for advertisement, may be useful as showing the wide range of their variety.

**A List of Papers**

**Kodak Velvet Green:** Smooth semi-matt; single and double weights; 50 sizes listed from  $1\frac{5}{8} \times 2\frac{1}{2}$  to  $40 \times 72$  inches, and in rolls of 10 yards, 20 to 40 inches wide.

**Velox:** Three degrees of contrast, Special, Regular, and Contrast. Special Velox has eight different surfaced varieties, Regular Velox, five, and Contrast Velox, two varieties. Royal Velox offers a soft tinted stock, giving prints resembling old, mellowed engravings. It is made in two grades of contrast and a medium rough surface in double-weight stock.

Artura papers, intended for professional use, are made in six brands, viz., Iris, Aegis, Chloride, Non-curling, Carbon Green, and Carbon Black. The last is advised for enlarging as well as contact printing and must be handled in orange or ruby light, being almost as rapid as bromide paper. Each of these six brands offers a variety of grades of contrast and different surfaces, single and double weights, and many sizes. Some are coated on buff-colored paper stock, the majority hav-

ing the usual white paper base. Artura Carbon Green gives the effect of a rich green carbon print very desirable for certain classes of subjects.

**Azo** contrast for different kinds of negatives and eleven varieties of surfaces and weights, intended for commercial work.

**Cyko** Cyko papers come in three brands, viz., Cyko, Professional, and Enlarging Cyko. Cyko, as made for amateur and general use, offers three grades of contrast and four surfaces in single and double weights; there is also a variety coated on Indian tinted stock, in one grade (soft) only, and double weight, for large prints or enlargements; matt surface. Professional Cyko is made in six different surfaces, and single and double weights. It is slower in rapidity than Cyko and requires wholly different manipulation, giving the warm black and sepia tones so generally needed in professional work. Enlarging Cyko is quite distinct from other Cyko brands, is intended for enlarging only, is eight times more rapid than soft (Red Label) Cyko, and forty to sixty times more rapid than Professional Cyko. It comes in six varieties of surfaces, single and double weights, and the Linen Buff and Linen White have a surface texture resembling linen with the sheen of silk. Enlarging Cyko should be opened and manipulated in orange or ruby light because of its rapidity. It is especially amenable to the hypo-alum and redeveloping processes for obtaining sepia tones.

**Rexo** Rexo papers are made in three brands, viz., Regular Rexo, Professional, and Enlarging Rexo. Regular Rexo offers three grades of contrast, each grade being supplied in three surfaces and in single and double weights. Professional Rexo comes in one grade only, with three different surfaces, and a special variety coated on buff-colored paper stock. It is six times slower than normal Rexo. Enlarging Rexo comes in three grades and four surfaces, including a variety on buff paper stock. It is thirty-five times more rapid than normal Rexo. There are thus forty-four varieties of Rexo paper for the different requirements of photographers.

**Uro** Uro papers come in three grades of contrast and five surfaces. These are inexpensive, being intended for amateur finishing and commercial work, and are obtainable in single and double weights.

**Calma** Calma is a special development paper intended for commercial use, being generally classed with the "black print" papers used to replace "blue prints" for illustrative purposes in manufacturing. It comes in three grades, and one surface (semi-matt) only, is extra-strong and flexible and will not readily crack or curl, nor will the prints stick together when damp. In rapidity it is similar to the Regular Rexo papers and it is offered in six commercial sizes, from  $6\frac{1}{2} \times 8\frac{1}{2}$  to  $14 \times 17$  inches, being sold in packages of five-hundred sheets.

**Colona** Colona papers are made in three grades of contrast suited to the general classification of negatives, each grade offering three different surfaces in single and double weights. These papers are sufficiently rapid for enlarging, although primarily intended for contact printing.

**Crystalla** Crystalla is a development paper intended for portraiture and enlarging, one grade of rapidity only, in semi-matt single weight, matt double weight, white rough and buff rough varieties. Right-O is an inexpensive development paper made in semi-matt, single weight grade, with two grades of contrast, viz., hard and normal. It is intended for commercial use and amateur finishing.

From this list it may be seen that  
**Comment** there is a development paper suited to every possible variety of negative and use, capable of giving almost any effect desired in the print. As regards the possibilities of development papers, the reader should not be misled by the lack of quality observable in the general average of these prints as we see them in daily experience. A development print, properly made, with paper and negative carefully adjusted to each other, is equal in beauty and all the qualities appealing to the cultivated taste to the finest platinotype, carbon, or plain silver print

and, in fact, cannot always be distinguished from prints made by one or another of these methods.

**Significance of Variety** The significance of the multiplicity of varieties among development papers lies in the opportunity this multiplicity offers for getting the best possible print from any given negative. To this end I can suggest no experiment in photography more interesting or more profitable than to choose a technically good, normal negative and to make a print from it on as many different varieties of development papers as are obtainable. The result of such an experiment will be a revelation of the possibilities of variation in photographic printing which the worker will never forget, and well worth all the trouble and expense involved.

**Satoid Satista** Two new development papers which deserve special mention here because of the simplicity of their manipulation and the beauty of the prints they give are the Satista and Satoid papers recently introduced by Willis & Clements. Both are matt-surfaced papers giving rich lustrous prints by development, Satoid giving brown and Satista black tones. They print very rapidly by daylight, but may be printed by any artificial light if this is more convenient, requiring about one-fifth the exposure needed for the average print-out paper.

**Manipulation** These papers, like platinum papers, must be kept quite dry, before use and during printing, if crisp bright prints are wanted. The exposure is complete as soon as a faint image appears showing detail in all but the highest lights. Do not examine the print in bright light. Develop for half a minute in a bath made up of  $\frac{1}{2}$ -pound oxalate of potash, and 100 grains oxalic acid dissolved in 40 ounces of water. This developer should be used at 55° to 65° Fahr. for the best results. As soon as developed the prints are cleared by immersion for ten minutes in two baths of  $1\frac{1}{2}$  ounces of binoxalate of potash (salts of sorrel) dissolved in 80 ounces of water. When "cleared" wash the prints for not more than ten minutes in running water, and then fix them by immersion for fifteen minutes in hypo, 4 ounces,



water, 40 ounces, turning the prints over frequently and separating them to avoid uneven fixing and stains. After being fixed the prints should be washed for not less than forty minutes in running water. Prints made at the same time on Satoid and Satista papers should not be developed in the same solution. They may, however, be cleared and fixed together.

#### Carbon Printing

To the serious worker who is sure of his ability to produce technically good negatives, and who is insistent upon the maximum gradation of tones and absolute permanency in his prints, the carbon-printing process makes a special appeal. Despite its many remarkable advantages, not the least of which is that one may make carbon prints in any one of some thirty colors, it is one of the simplest and least expensive of photographic printing methods.

#### The Process Outlined

A carbon print is made by sensitizing carbon "tissue," obtainable from most dealers, in a solution of potassium bichromate. After being dried in non-actinic light, this now light-sensitive carbon tissue is printed under a negative by daylight in the usual way (except that the progress of printing is invisible and is gauged by the use of a tintometer or a piece of print-out paper). The print is now wetted and transferred, face down, to a piece of plain paper, or to glass, porcelain, opal, chinaware, aluminum, or any other support on which the finished print is desired, and the picture is developed by stripping away the original paper support of the "tissue" and laving hot water over the film, which dissolves away the unexposed "tissue" and reveals the picture image with all its details attached to its chosen final support.

As soon as the development of the picture is completed by this laving process, the lights, halftones, and shadows of the picture all having their proper relation, the print is immersed in a solution of alum and water to harden the image-bearing film, and then suspended by wooden clips to a line to dry.

The carbon "tissue" mentioned is  
**"Tissues"** stout paper coated with a thickish mixture of gelatine and carbon black or



other colored pigment. In buying tissue one chooses tissue of a color appropriate for the subject in hand, e. g., for portraiture, engraving black or sepia tissue; for landscapes, a soft green tissue; for seascapes, sea-green tissue; for children's pictures and some sketch portraits, Bartolozzi red tissue, and so on. About thirty different colors are obtainable in commercial tissues, and there are special tissues for different purposes and effects, e. g., special kinds for pastel and matt-surfaced prints, others for transparencies on glass or celluloid, and still others for making three-color prints by superposition.

**Single and  
Double  
Transfer**

As above outlined, the process, by reason of the transfer of the film, gives prints in which the right and left of the subject are reversed. If this is objectionable a second (intermediate) transfer is effected after the print has been developed and dried, which gives the subject as the eye saw it.

In practice innumerable modifications and complexities may be introduced for one purpose and advantage or another. For these the reader should consult a handbook on the process, where the various modifications are set forth in detail.

**Safe-edging  
the Negative**

The negative used in carbon printing must first be prepared with a safe edge of some opaque mixture, laid in a strip  $\frac{1}{8}$ -inch wide along the edges of the negative. This is to prevent light reaching the extreme outside edges of the carbon tissue. A mask of yellow paper will serve the purpose equally well.

**Sensitizing**

The tissue, as bought from the dealer, is cut to any convenient size, and sensitized by immersing until thoroughly limp in a solution made up of: Ammonium bichromate,  $1\frac{1}{2}$  ounces; sodium carbonate,  $\frac{1}{4}$  ounce; water, 25 ounces. For use take 10 ounces of this and add 20 ounces methylated (Columbian) spirit. Tissue sensitized in this solution will dry within half an hour, the drying being done in a safe or non-actinic light. There are many other sensitizing formulas for different seasons and varieties of negatives.

**Printing** When dry the sensitized tissue is cut to the size of the negative, placed in contact in a printing-frame, and exposed to daylight until it is judged to be sufficiently printed. This knowledge is quickly acquired by an experiment or two with a tintometer or actinometer used alongside the tissue being printed.

**Preparing to Develop** When printed, the tissue is placed, face down, in cold water. As soon as it flattens out and lies limp a piece of plain (white or colored, smooth or rough) paper is slid into the tray under the printed tissue. The two sheets are now carefully withdrawn together in contact and laid, carbon print uppermost, on a flat sheet of glass. By gentle pressure with a rubber squeegee the two sheets, tissue and support, are now brought into absolute contact at every point and placed under moderate pressure for ten minutes.

**Development** The print and its support are now placed in a tray containing warm water. In a few minutes the pigment will begin to ooze out of the edges of the print, which should be uppermost in the tray. The paper backing of the tissue is now carefully eased away from the soft gelatinous mass of tissue and thrown aside. The paper support bearing the tissue is next supported on a piece of glass, inclined at a low angle within a large tray, and warm or hot water is poured or laved over the tissue until the picture image is gradually revealed by the washing away of the soluble (unexposed) tissue.

**Fixing** When developed the print is rinsed with cold water and immersed for ten minutes in a 5 per cent solution of alum, after which it is again rinsed in cold water and suspended by two wooden clips on a line to dry.

**Variations** Two-color effects are easily obtained by the use of colored papers for the support of the printed tissue; or prints made by the single transfer process above may be transferred to such colored paper bases. It is obvious, also, that a great variety of surface effects and textures are available for the finished print by proper choice among the many kinds of papers available.

The simplest and cheapest of photographic printing methods is the ferro-prussiate process which gives us the familiar blue-print. Despite the fact that the blue-print has fallen into complete disrepute among photographers of late, it has many profitable uses and is worthy of a place in these pages. I have seen blue-prints used in room decoration, in making menus, place-cards and book-covers, and collections of seascapes and cloud-studies which could not have been more effective in any other medium. Of the usefulness of the blue-print for proving negatives, for the making of an illustrated negative index, and copies of plans, designs and construction or statistical records there is no need to speak.

**Blue-Prints** Any smooth, hard-sized paper is suitable for use in this method, such as bond and linen papers. The more porous papers, such as Japanese tissues and rice-papers, will need to be "sized" before sensitizing, and to effect this the methods and formulas given elsewhere for sizing plain papers may be employed.

**Paper** A simple sensitizing solution is made up as follows: Prepare two solutions a few days before use. (A) 440 grains green ferric ammonium citrate dissolved in 4 ounces of water. (B) 160 grains potassium ferricyanide dissolved in 4 ounces of water. Mix these two solutions and keep the resulting mixture in a clean stoneware bottle or other container away from dust and daylight. Filter before use. Insist on the green ferric salt.

**Sensitizer** Sensitizing the paper should be done in weak daylight or any artificial light of not too great intensity, the sensitizer being applied to the paper as described for sizing (page 418), but with a sponge or brush or wad of cotton used exclusively for this purpose. Coat the sheet in successive strips with a brush not too dry or too fully charged with solution. Do not coat too thickly or too slowly; the brush should be passed over a 12-inch sheet as quickly as you can count ten, saying the words deliberately. After coating the sheet with strips up and down, take a slightly drier sponge or brush and pass across the

sheet from side to side, to ensure an even coating free from streakiness. After the sensitizing is completed, the paper should be dried as quickly as possible and then stored in a tin or other receptacle away from light or damp until used. Home-sensitized paper will not keep more than a day or two. The addition of half a grain potassium bichromate to each ounce of sensitized solution (or boracic acid) is said to give better keeping qualities to the paper and greater sensitiveness, and I think it does, though the gain in sensitiveness is not marked.

Clean, crisp negatives, well developed  
**Negatives** with fairly vigorous contrasts give the best blue-prints. During exposure in the printing-frame the paper gradually changes from its bluish green or orange-green to bluish gray and a dull olive-green, the shadows having a gray-bronzed, choked-up appearance. The printing should not be hurried; most beginners do not print sufficiently deep: a little over-printing can be remedied by prolonging the washing or developing.

Development is effected by simply  
**Developing** placing the print in cold water so that the whole surface of the print is wetted immediately, and changing the water occasionally until all the details are seen to stand out clearly defined and with good gradation. After changing the water two or three times, let the print remain face down for ten or fifteen minutes to thoroughly clear away the iron salts from the texture of the paper. To insure brilliant prints, development should not be done in very strong light, as this tends to veil the finer details. Water containing alkalies, such as lime, chalk, etc., also tends to degrade the brilliancy of the blue-print. This should be remedied by adding citric acid (20 grains to each pint of water) to the wash-water. A single rinse in plain water at the last will remove all traces of the acid from the print. Over-long washing, especially in slightly alkaline waters, reduces the strength and brilliancy of the print. A properly exposed and developed blue-print is always more brilliant when it is dry than it appears when in the wash-water.



**Platinum  
Papers**

Without a doubt, the most beautiful, as well as the most permanent, photographic prints are those made on platinum papers. As these papers are today either difficult to obtain or not at all gettable, it may be well to give formulas and methods with which the reader may prepare his own platinum paper at home in such quantities as he needs from time to time. The formulas and methods here advised are those published by Miss Katharine S. Stanbery in *THE PHOTO-MINIATURE*: No. 96, now out of print.

A big advantage in preparing one's own platinum paper is that we may use almost any paper individual taste, or the needs of the subject in hand, may dictate. Naturally the drawing or artists' papers advised for plain paper or Kallotype printing are preferable for the platinum method also. Delightful effects may be obtained by the use of Japanese vellums and tissues.

**Sizing** If the paper you select absorbs moisture in any degree, then it should be sized—otherwise not, and, fortunately,

most of the drawing papers and cover papers, and above all, the Japanese vellums, do not need it. Paper that is moderately absorbent will need one coat of sizing; Japanese tissues, two coats, and the thin, bibulous tissues, three. I here give the formula I use—my own proportions:

Water, 15 ounces; gelatine, 75 grains; alum, 75 grains; methylated spirits,  $3\frac{1}{4}$  ounces: Dissolve these in the given order and filter the mixture.

This may be made in a larger quantity and kept a long time. I do not float my papers, as it takes too much sizing and makes them so wet that it is hard to find a good place to hang them to dry. I lay them on a large piece of paper and brush the sizing on carefully with a wide, flat brush; both sides, of course, so that they will not curl, but one at a time, so they may be dried on the paper without being hung up. If a thin tissue is to be sized, I pin it down by all four corners to a heavier piece of paper, and finish all the coatings on one side (drying thoroughly after each one) before I turn it to the other. I never take a piece



of paper very much larger than my largest plate (8 x 10 inches).

Of course, it must be remembered, however, that while many papers need no sizing at all to take the coating, yet many of them will bear more brilliant images if sized. It would be of no advantage to size the heavy Whatman drawing papers, nor some of the hard cover papers and charcoal papers; while the heavy, smooth Japanese vellum has already such a wonderful texture that I always want it to be in evidence, free from any suspicion of sizing.

As to the sensitizing. Three solutions are to be prepared, as follows: I. Hot water, 1 ounce; oxalic acid, 8 grains; ferric oxalate, 120 grains. II. Hot water, 1 ounce; oxalic acid, 8 grains; ferric oxalate, 120 grains; potassium chlorate, 2 grains. III. Water, 1 ounce; potassium chloroplatinite solution, 80 grains. [Or water, 1½ drams; potassium chloroplatinite, 15 grains. Many buy the platinum in 15-grain bottles.]

I must first discuss these chemicals. Take care that the dealer does not give you ferrous oxalate, as I have known dealers to do. Your object in the platinum process is to reduce ferric to ferrous by the action of light; if that be already done for you, you will get no picture. The label must read, either "Ferric oxalate," or "Oxalate of iron (ferric)." The same care must be exercised about the platinum. It must read, either "Potassium chloroplatinite" or "Potassium chlorate and Platinum:" never "Potassium chloroplatinate." This mistake, too, has been made. The ferric oxalate comes in greenish gray scales, in brown bottles, as it is so sensitive to light; the platinum salts—in tiny red crystals, impervious to light. The plain potassium chlorate, added to number I, to make number II, is to produce contrast. Keep these in brown bottles.

I have never used distilled water—only the regular river-water. But for I and II it ought to be hot; indeed, cooking the mixture will dissolve the scales much quicker. It has been suggested to me to put in the oxalic acid (the preservative) before the scales, in order that there may be no chance of deterioration, and it is an excellent idea.

**Accuracy in Weight** A very important thing to remember in the buying and using of potassium chloroplatinite is its weight: in any quantity of a dram or more you buy it by avoirdupois, and you always use it by troy. The avoirdupois ounce contains  $437\frac{1}{2}$  grains; the troy, 480. If you call for—say two drams of the salts, you will get a bottled labeled “one-fourth ounce,” which will contain, instead of 120 grains, only 109.375 grains. So that instead of taking 1.5 ounces of water to the bottleful, without weighing it, you must take a little less than 11 drams of water theoretically: the full 11, practically, as you will generally find an even 110 grains in the bottle. At any rate, it is always best to be on the safe side by weighing all chemicals accurately, even when they are put up in the desired quantity by the apothecary. For I once knew of a drug clerk who put up some photographic chemicals in small powders for an amateur, and who, when the formula seemed to go wrong, admitted that he had been throwing in a few extra grains just to give generous measure. Moral: weigh your chemicals.

**Coating** To do the coating, use a broad, flat and (especially) thin camel’s hair or sable brush; camel’s hair will do, but the sable is somewhat nicer and softer. Provide yourself with four chemically clean medicine droppers, with openings giving drops of uniform size. Also with a saucer, a glass of water, a large receptacle for water to wash your brush in, and your sized or unsized paper, with a piece of pasteboard or something of the sort to pin it to. Range your solutions on a table, in this order: I, II, III, water, with a marked medicine dropper for each one. Sit at the table, with the shades down, if it be daylight—all the light you want if it be night. Mix the coating in the saucer *for* each sheet as you need it. The principle or the formula is this: There are to be 24 parts of platinum to 22 parts of iron oxalate (plus some water); but the iron may be composed of any proportion of I to II—more of II giving greater contrast.

No. 1. “This should give very soft and deep black prints.” I, 22 drops; III, 24 drops; water, 4 drops.

No. 2. “If greater brilliancy is required, the follow-

ing is recommended." I, 18 drops; II, 4 drops; III, 24 drops; water, 4 drops.

No. 3. "When results corresponding to silver images are required, the next solution is recommended." I, 14 drops; II, 8 drops; III, 24 drops; water, 4 drops.

No. 4. "For very weak negatives, reproductions of engraving, etc., use—" II, 22 drops; III, 24 drops; water, 4 drops.

You see it is always 22 to 24: The amount of water does not make a very great deal of difference—a little more or less. This formula, by drops, is about enough for a piece of paper measuring, roughly, 9 by 11 inches. Coat the paper first and trim it afterward; and mark the proportions of I and II that you use on the back, before coating, for future reference. You may, besides, vary the proportions of I and II just as you please. Drop the ingredients in the saucer, with the medicine droppers, and mix them by agitation; do not put in the brush until they are fairly well stirred up. (This because the brush would first absorb them unequally.) Have the brush wet to begin with, though carefully drained off. Pin the paper down by one or two corners, take a generous brushful and apply it with broad, smooth strokes, first up and down the sheet, next, transversely. Be as expeditious and work as evenly as you can, but remember that it does not require half the care that gum coating does, for there is no gum to set, and you can work over and over for a little while, putting on fresh brushfuls. Not too long, however, or the wet sensitizer will quickly deteriorate, and you will get only a faint or a patchy image in the printing. The brush should be washed after every using, and the wash water frequently changed. *This is very important.* Quickness and accuracy are essential.

**Making Allowances** In measuring out the drops for a sheet of paper, allowance must be made for the grain. A very coarse-grained paper will take much more sensitizing mixture than a smooth one will. The very heavy Whatman paper, which has a diagonal grain, takes about once and a quarter as much liquid as a smoother paper, for every pore and hollow must be filled, and thoroughly. On the contrary, the

smooth Japan vellum takes less than the usual run of papers.

Allowance for the grain must also be made in printing. If rough-grained paper is exposed in the sunlight, the frames must be turned from end to end and from side to side, occasionally, or the heavy corrugations will cast strong shadows, which will not print so dark as the rest. Better still, prop the frame so that the sun's rays strike the negative at right angles, and then there will be no danger of blurring the focus.

To dry the paper, first let it hang—or **Drying** lie—in the same temperature, till the surface moisture has disappeared spontaneously. Then hang it near a gas jet or a heater (away from actinic light), just hot enough to get the paper "bone dry" in from five to ten minutes from the time of coating. Not less than five nor more than ten minutes should elapse between the coating and drying operations. If it becomes dried too soon the image will probably wash away in the developer, and if not dried quickly enough the picture will be flat and sunken in. The first stage of drying must last for five minutes anyway. Store the paper in empty platinotype tubes, if you make more than you need, and use the preservative. Thus far Miss Stanbery's methods.

The arch enemy in platinum printing is dampness, which causes the paper to give flat, lifeless prints. **Printing** Special care must be taken, therefore, to keep the paper bone dry before, during and after printing. This is effected by storing the sensitive paper before and after printing in tin tubes containing a small piece of calcium chloride wrapped in tissue paper, and being sure that the negative and printing frame are absolutely dry during the printing of the paper.

Sensitized platinum papers are of a lemon yellowish tint. Printing is done exactly as in the plain paper and Kallotype methods, by exposing the paper to daylight in contact with a negative in a printing frame. As platinum paper is more sensitive to light than the average print-out silver paper, the exposure required will usually be about half that needed with such papers as



Solio or other gelatine print-out papers. The image given by exposure is of a grayish-yellow tint. As soon as the shadow details of the subject are visible, the print is ready for development, so that printing is stopped when we have a semi-printed-out image, with the whole picture only faintly visible. The right depth of printing varies according to the negative, but is quickly learned by a few trials.

The developer for platinum papers is  
**Development** made up by dissolving 6 ounces of potassium oxalate in 20 ounces of hot water. Prepare this beforehand and label it "stock oxalate solution," keeping it in an orange-colored glass bottle or any ordinary bottle covered with a non-actinic paper, to shield the oxalate solution from white light. For use, dilute 2 or 3 ounces of this stock solution with its own bulk of hot water. Pour this into a porcelain or agate-ware tray and float the exposed print, face down, on the hot developing solution at a temperature of from 65° to 75° Fahr. The addition of 1 ounce of potassium phosphate to the stock solution given above will give softer and more harmonious prints where negatives strong in contrasts are in use. Almost as soon as the print touches the developer, if the exposure has been approximately correct, the picture comes up in its full strength. Usually the time of development will be from 30 seconds to 2 minutes.

**Clearing and Washing** The print is next immersed in a solution made by dissolving 1 ounce of hydrochloric acid in 60 ounces of water. This "clearing" or "fixing" bath is made up in bulk and a sufficient quantity poured into three agate trays before development is begun, the developed prints being passed from one clearing solution to another, after five minutes in each bath. These acid clearing baths can be used repeatedly until they are of a yellowish tinge, when they should be thrown out. The third, or last clearing bath should always be clear water-white, not tinged with yellow. After this "clearing" or "fixing" treatment, the prints need only to be washed in running water for fifteen or twenty minutes, and then dried under blotters, as usual.



**Plain Silver Paper** Plain silver paper is the basis of all our modern print-out silver papers. It was first introduced by Fox Talbot in 1839-40, simultaneously with his announcement of the first negative process. Its advantages are its simplicity of preparation and its economy, as well as the latitude it permits in the choice of a variety of different papers. For these reasons it has a special interest for those who want to prepare their own printing papers. It is equally well adapted for the making of small contact prints on smooth papers and large prints on rough-surface papers for the portfolio, exhibition, or for framing. It offers the widest possibilities for pictorial work as well as many professional uses, and is suited for every sort of subject except those which require a highly glazed surface paper. It is restricted, however, in the range of color or tones available, these being sepia, warm brown, purple-brown, and warm black. The first three are obtained by gold toning, the last by the use of a platinum toning solution.

**Choice of Papers** Any pure paper made from rags only, and free from wood pulp and chemical salts such as enter into the composition of so many of the papers of today, may be used in this method, so that one may select rough or smooth, thick or thin, white or toned papers at will. Plain silver papers give matt prints, the image being printed in rather than on the surface of the paper. If a hard-finish smooth paper is chosen, the method is well suited for small prints where excessive sharpness of detail is not essential. The image prints out during exposure. If carefully manipulated and washed, the tones are rich and vigorous and the prints, especially when toned with platinum, may be considered as reasonably permanent. The Rives, Saxe, and other so-called photographic papers, used by trade enlargers, are all readily obtainable. Any good linen paper and many of the better-class bond papers may also be used and afford ample scope for profitable experiment. Among the papers used by art students, Whatman's, Arnold's, Crane's Parchment and Glazed Bond No. 36 and No. 43, Japanese Vellum or the Mittineague

water-color papers are especially suitable for large prints by this method.

**Prints with Margins** In buying and cutting up plain papers for individual use, it is well to remember that in the use of such papers we may make our prints with any desired amount of margin, i. e., prints which will not need mounting but may be at once inserted in a folder or portfolio or album of any desired size. In this use of plain paper, the whole sheet is sensitized and perfectly clear white margins are obtained by completely masking the whole sheet, except the picture portion, during printing. Or one may use various sorts of border designs such as we see surrounding the subject in old portrait engravings; or the margins may be slightly tinted by the use of screen-plates of any desired depth of density; or we may place an opaque mask over the printed portion of the sheet and expose the margins only to light action until the desired depth of tint is obtained.

**Sizing the Paper** Whatever kind of paper be chosen, it will need "sizing" and "salting." All paper has a right and a wrong side. First mark the right or "finished" side of the paper for after guidance, as it is this side which is sized, salted, and sensitized. The sizing-base may be gelatine, agar-agar (a kind of seaweed), resin, or gum arabic, or arrowroot. A useful plain sizing is a 2 per cent solution of Nelson's No. 1 Gelatine, or a 1 per cent solution of agar-agar. Both of these sizing solutions are applied to the paper while warm, either by drawing the paper through the solution for three minutes in a porcelain or agate tray or by brushing the sizing solution well into the paper by means of a Blanchard brush. Sheets so sized are suspended by two wooden clips on a line to dry in a room or closet free from dust.

**Salting the Paper** Paper so sized is salted, when dry, by immersing it in a solution made up of: Ammonium chloride, 130 grains; sodium carbonate, 3 grains; water, 16 ounces; or a bath made up in these proportions. A porcelain or agate tray is used here also and the paper should be immersed for three minutes, after which the surplus

salting solution is carefully drained off and the sheets hung up to dry away from all dust as before.

**Salting  
and Sizing  
Combined**

To combine the "salting" and "sizing" operations, prepare the solution beforehand as follows: Rub 220 grains of powdered arrowroot into a smooth cream in 3 ounces of water, then heat 15 ounces of water to boiling-point, and into this pour the arrowroot cream very slowly with constant stirring, so that the mixture is translucent and free from lumps. Now boil the solution for three or four minutes and remove from the fire. Into 5 ounces of water put 120 grains ammonium chloride, dissolve thoroughly and add 200 grains recrystallized sodium carbonate and 60 grains citric acid crystals. Stir until all effervescence has ceased and thorough solution is obtained. This solution is now added to the arrowroot mixture and the whole filtered through two thicknesses of nainsook, while still hot, when it is ready for use. This salting and sizing solution can be applied to the paper by brushing the sheets with it (use a Blanchard brush) until the pores of the paper are thoroughly filled and the sheet has received an even, well-brushed coating, after which it is hung up to dry away from dust as before. These operations can be done in daylight.

**Sensitizing  
Solutions**

As soon as dry the paper is ready for sensitizing. Prepare the sensitizing solutions as follows: For gelatine or agar-agar sized papers, silver nitrate, 140 grains; citric acid, 100 grains; water, 2 ounces. For arrowroot-sized paper, silver nitrate, 140 grains; citric acid, 55 grains; distilled water, 2 ounces.

In sensitizing plain papers we must work in gaslight or a room lighted with yellow or orange light, all white light being excluded. The sheet to be sensitized is laid, right side up, upon a flat board and fastened down at the corners with aluminum drawing-pins. A small pool of the sensitizer is now poured into the middle of the paper sheet and rapidly distributed by means of a clean Blanchard brush, so that the whole surface of the sheet is evenly and thoroughly saturated with the

sensitizer. The strokes of the brush should first be from end to end of the sheet, then across from side to side, ending with a light circular motion, to ensure an evenly coated surface. Beware of "rubbing up" the surface of the paper by too severe pressure of the brush in coating—whether sizing, salting, or sensitizing. The sensitized sheets are now suspended by clips to dry, away from all light and dust.

**A Blanchard Brush** The Blanchard brush here spoken of is a simple home-made spreader or distributor. A fresh, clean brush will be needed for each operation. To make such a brush, prepare a piece of wood, say 4 x 6 inches, tapering in thickness from  $\frac{3}{4}$  to  $\frac{1}{4}$  of an inch, with the lower and thicker edge smoothly rounded. Have at hand, a few strips of clean, white swansdown calico or white flannel, slightly wider than the wooden support. When a brush is needed, fold two thicknesses of this flannel around the wooden support and secure it with string wrapped around the thinner end, just as the bristles of a painter's brush are wrapped.

**Printing** Printing with plain papers is done just as with other papers, except that special care must be exercised to get absolute contact between the paper and the negative in the printing-frame, and the printing itself is carried a little further, i. e., deeper in tone than is usual with papers such as Solio, Aristo, etc.

**Preliminary Washing** After printing, the prints are well washed in three changes of water, then placed one by one in a 10 per cent solution of common salt, then again washed in three changes of plain water, after which they are ready for toning, which is done in a porcelain or enamel tray.

**Gold Tones** A simple gold-toning bath giving pleasing brown and purplish brown tones is made up as follows: Prepare a stock gold solution by adding a "tube of gold," i. e., 15 grains gold chloride to  $7\frac{1}{2}$  ounces of distilled water. Label this when bottled "Stock gold solution." To make the toning bath itself, put 60 grains of sodium acetate in 13 ounces of water and add 1 ounce of the



stock gold solution. If this bath works somewhat slowly at first, add 2 or 3 grains only of sodium bicarbonate. The well-washed prints are placed in this bath one at a time and kept gently moving until the desired tone is obtained, which should take at least seven to ten minutes or longer.

As the prints reach the desired tone  
**Fixing** —examine by looking through them at the light—they are removed to the hypo fixing bath made by dissolving 2 ounces of hypo in 16 ounces of water. They should remain in this bath 15 minutes, well separated, and kept moving, after which they are well washed in ten changes of water of 5 minutes each, or placed in gently running water in a zinc or porcelain washing tank for from 20 minutes to an hour.

To obtain warm black prints on plain papers, a platinum toning bath made up as follows is employed: Water, 16 ounces; citric acid, 60 grains; potassium chloro-platinate, 2 grains. It is essential that this toning-bath shall be acid and the prints (before toning) free from all traces of silver nitrate, hence care must be given to the preliminary salt bath and thorough washing, as advised above for gold toning. After toning also, the prints must be free from all platinum and traces of acid. To effect this, the toned prints are rinsed in water and then immersed in a solution of: Salt, 2 ounces; sodium carbonate,  $\frac{1}{2}$  ounce; water, 20 ounces; and again well washed. Fixing is carried through as advised for gold-toned prints. When washed, after fixing, the prints may be dried between pure blotters such as Photo Finish World, under slight pressure. It should be noted that with plain papers a very wide range of variation in effects is available by individual variations in the composition of the sizing and salting solution, the toning baths, and in the use of delicately tinted papers as bases for any special effect desired.

Closely resembling the plain silver-paper process we have Kallitype, pre-shadowed by Sir John Herschel's Chrysotype of 1841, but really a modern printing



method invented by Nicol, of Birmingham, in 1889 and perfected by later enthusiasts among whom Nelson C. Hawks, of Alameda, California, is first and foremost. Briefly, the theory of Kallotype is as follows: Paper, coated with a mixture of a ferric salt and silver nitrate, gives on exposure to light under a negative, an image in ferrous oxalate and silver oxide which, when a suitable solvent (or developer) is applied, precipitates an image in metallic silver. The prints vary in color from a rich and lustrous sepia to a warm engraving black according to the developer or toning solution employed and, with careful manipulation, are reasonably permanent.

Like the plain silver printing method  
**Its Possibilities** Kallotype is essentially a process for those who desire to make their own printing paper at home. It has, however, greater latitude and wider possibilities in manipulation and results than plain silver paper, and may be endlessly modified to suit any and every sort of negative or to give widely varied results so far as colors, brilliancy, hardness or softness may be desired in the finished prints. By all its methods Kallotype gives beautiful prints, in this justifying its name which is made up from two Greek words signifying "beautiful picture," from which source Henry Fox Talbot derived the name of his Calotype process which he announced in 1841 = the first printing process.

In the following very brief résumé of  
**N. C. Hawks' Formulas** the process republished from the account of its working given by Nelson C. Hawks in *Camera Craft* a few months ago, the reader is supposed to be familiar with the plain silver printing method outlined in preceding pages of this monograph. The manipulations are very similar and to repeat them in detail would be a waste of words and space.

The paper used in Kallotype printing may be any one of those mentioned  
**Papers** as suitable for plain silver printing. Mr. Hawks suggests Weston's ledger paper 23 x 31 (70 lb.), Parson's Scotch ledger of the same weight, the Japanese papers imported by the Japan Paper Com-

pany, of New York, and the Mittineague Strathmore water-color paper.

**Sizing** The paper chosen is first marked on the right side and "sized" with arrow-root, gelatine, or starch as advised for plain silver printing, with the addition of 1 grain powdered alum and  $\frac{1}{2}$  ounce of wood alcohol to each ounce of sizing solution used. "Salting" is not advised in the Kallitype method.

When dry the "sized" sheets are sensitized (by gaslight or yellow light) with a sensitizer made up as follows: Distilled water, 4 ounces; ferric oxalate, 400 grains; potassium oxalate, 100 grains; silver nitrate, 100 grains. The ferric oxalate should be in shining brownish scales, yielding a clear amber solution. When thoroughly dissolved this sensitizer should be filtered through two thicknesses of fine nainsook. The sheets of paper are coated by means of a Blanchard brush as described for sensitizing plain silver paper, about 30 minims of sensitizer being needed for each sheet 12 x 18 inches. The paper is then suspended by wooden clips to dry away from white light and dust.

**Printing** Printing is done in sunlight preferably. As soon as the first details of the shadows are visible the print is ready for development. Longer or shorter exposure, i. e., an exposure of thirty seconds in sunlight or one of two hours in the shade, renders altogether different effects from the same negative. In damp weather care must be used to have the printing-frame, pad, and printing-paper bone dry.

**The Developer** The developer is made up as follows: Hot water, 18 ounces; powdered borax, 1 ounce; sodium tartrate,  $1\frac{1}{4}$  ounces. Dissolve the borax first and when the solution has partially cooled add the sodium tartrate. Rochelle salts may be substituted for the tartrate if desired. To use this developer, take 4 ounces of the above and add  $\frac{1}{2}$  drachm of a 2 per cent solution of potassium bichromate. This developer gives a rich velvety black tone, which may be made warmer, through all the

shades of brown, by reducing the quantity of borax used. Should a purplish brown tone be desired, add a few drops of phosphoric acid to the developer.

Two trays are used in development.

**Development** In tray No. 1 use the developer as given above with the amount of potassium bichromate advised for each 4 ounces of developer used. In tray No. 2 use the normal developer, but add only 2 or 3 drops potassium bichromate to each 4 ounces of developer. Place the exposed print in tray No. 1 for three seconds only, watching to see if the half-tones of the picture come up satisfactorily. If they do, leave the print in tray No. 1 and rock the tray gently until the picture is fully developed. If, however, the print shows too much contrast in tones, transfer it to tray No. 2 which will bring up the half-tones and details of the image. When these are properly rendered, place the print back in tray No. 1 for five minutes to clear the whites.

**Fixing and Washing** When the prints are fully developed, rinse them for two minutes in water and fix in a solution made up of: Water, 1 quart; "stronger ammonia," 2 drachms; for ten minutes. Henry Hall recommends the addition of 1 ounce of hypo to this fixing-bath to ensure permanency of the whites. After fixing, wash the prints as usual and dry between blotters.

**Toning with Platinum** To tone Kallitypes with platinum, develop as usual and then, after washing for a minute or two in running water immerse them in the following bath: Water, 36 ounces; potassium chloro-platinite, 15 grains; common salt, 150 grains; citric acid, 150 grains. Keep the prints moving in this solution until the desired tone is secured, then rinse well and fix them for ten minutes in: Water, 1 quart; "stronger ammonia," 3 drachms; after which wash as usual.

For more complete details and modifications of Kallotype the reader is referred to THE PHOTO-MINIATURE, Nos. 47, 69, and 81. These monographs are "out-of-print," but may be sought for among dealers who may have odd copies, or seen at most public libraries.

## Notes and Comment

Max Weber, cubist poet and art critic, and identified in many ways with the Photo-Sesession movement, has just published a seventy-seven page brochure, entitled "Essays on Art," which is refreshingly intimate in its interest and in the treatment of its subject. The essays deal with Quality, Spiritual Tactility; Tradition and Now; Means; Things; Preparing to See; Art Consciousness, and Art Purposes.

Charles F. Rice, an expert amateur with twenty-five years of varied experience behind him (P. O. Box 517, Mamaroneck, N. Y.), sends me a dainty leaflet, headed "An Offer of Service—For a Consideration." The service Mr. Rice offers to amateurs covers the choice and selection of cameras and equipments for various purposes; the solving of particular difficulties encountered by amateurs in their use of the camera; instruction in developing and printing, enlarging, and making lantern-slides, and so on. The fee for the service is \$1 per hour for those who can consult Mr. Rice in person, or \$1 per letter for those who perforce must correspond. From my knowledge of Mr. Rice and his experience in photography, I can commend this service as a very profitable convenience to those who need it.

"Photograms of the Year 1916" is announced to be published in England late in December, and to be ready for delivery here late in January—submarines and other difficulties not interfering. "Photograms of the Year" occupies a unique position as the only year-book which gives a review of the progress of pictorial

photography throughout the world, including reproductions of pictures from the London Salon and the Exhibition of the Royal Photographic Society. The price of "Photograms," as before, will be: stiff paper covers \$1.25, postfree; cloth boards \$1.75, postfree. As there will be only one shipment of the edition for America, and this is liable to be sold out by the time the book arrives, those who desire copies of "Photograms, 1916," should place their order with their dealer at once.

There is being held at the National Arts Club, New York City, under the auspices of the American Institute of Graphic Arts, October 4 to November 10, a retrospective exhibition of photography, showing its development, its processes, and the results achieved in pictorial photography. I hope to give a more extended notice of this remarkable exhibition in the next number of THE PHOTO-MINIATURE.

An illustrated booklet fully describing the Auto-Fixt-Focus camera is now obtainable from the manufacturers of this camera, Herbert & Huesgen Co., 18 East 42nd Street, New York. The Auto-Fixt-Focus camera is said to represent the highest achievement in American camera construction, and it certainly is a marvel of compactness, convenience and efficiency in use. The output is at present limited, but those on the lookout for a really good camera regardless of price should write for the booklet.

Down in Monroe City, Missouri, a woman photographer, Miss Belle Johnson, has for many years devoted herself to the photography of flowers, kittens and household pets, her work along these lines reaching a very high level. I am glad to see that Miss Johnson and her work are winning recognition, not only at the photographic conventions but also in the profitable world of magazine illustration.



"Practical Studio Advertising," by J. C. Abel and Chas. L. Abel, comes to my desk from Abel's Publications, Cleveland, Ohio. It is a pad containing eighty-two pages of photographic advertisements written to be suitable for the use of studios. The advertisements are bright and persuasive. They should be a help to business. The price of the book is \$2.

The "Open Letter to the Photographic Fraternity," from Mr. Henry Hess, president of the Hess-Ives Corporation, which appears in this issue of *THE PHOTO-MINIATURE*, is worth looking for and reading carefully. It is the first of a series of letters in which Mr. Hess designs to tell photographers just what color photography means today, and how far Hicrography fulfils the requirements of color photography. A booklet telling all about Hicrography and the new Hiblock, which makes color photography possible with the ordinary camera, can be had on request from the Hess-Ives Corporation, 12th & Race Streets, Philadelphia, Pa.

"Wratten Light Filters," third edition revised, just issued by the Eastman Kodak Company, Rochester, N. Y., 50 cents per copy, is a seventy-one-page pamphlet, describing and illustrating the Wratten filters for the photography of colored objects. The diagrams show the absorptions of the various filters in graphic form, and tables are given with the number, name, use and remarks, stability, and approximate exposure factors of all filters. The information given by this booklet is of the definite sort much needed in photographing colored objects, and its publication puts the photographic specialist under great obligation to Dr. C. E. Kenneth Mees and the Eastman Kodak Company.

"Camera Craft" for October (San Francisco, Calif., 10 cents) is an unusually interesting number. It opens with an illustrated article by Dr. Theron W.

Kilmer on "Individuality in Portraiture," Dr. D'Arcy Power follows with a very useful paper on "Making the Best of a Reflex," and there are articles on "Photographing Projectiles," "A Wonderful Developing Formula," the usual "Photographic Digest," and similar departments.

Kodelon is a new developing agent just introduced by the Eastman Kodak Company, for use in combination with hydroquinone, for Artura, Azo, and other developing-out papers. It is said that Kodelon gives results superior to those obtained with the coal-tar developers in general use before the war caused a shortage in photographic chemicals.

Another Eastman novelty is Bromide Fabric No. 1, a fabric coated with a photographic emulsion, which works in every way like bromide paper. It is, obviously, particularly suited for commercial enlargements, prints of samples which have to receive hard usage, and large portraits intended for coloring.

The London Salon of 1916 seems to have been a remarkable success, showing that the many difficulties connected with the use of the camera in Europe at present have had little or no influence upon pictorial photography. About seven hundred prints were submitted for the Salon, of which about eighty were hung. The departments of portraiture and color photography are spoken of by our English exchanges as unusually interesting, and showing a marked advance on the work of previous years. The landscape exhibits were also notable for fine quality, and there were a few good examples of architectural photography.

Those who have the electric current at hand will find the Cooper-Hewitt Printing Outfit a marvel of convenience and efficiency during these forthcoming winter months. This equipment is illustrated in the advertising pages of this issue, but the special booklet

fully describing it can be had, on request, from the Cooper-Hewitt Electric Co., Hoboken, N. J., by mentioning this magazine when you write.

The reader who has a particularly pleasing negative, whether portrait or an outdoor subject, of which he would like an enlargement different from every other sort of enlargement within his knowledge, should send 10 cents and ask for a sample print of Artatone, a new photographic paper just introduced by the International Photo Sales Corporation, 11 East 40th Street, New York City. This is a Japan paper of remarkable quality and texture, coated with a developing-out emulsion, which gives enlarged prints surpassing in beauty anything I have seen in many moons.

A new edition of that interesting and valuable collection, "Useful Tables for the Photographer," has just been issued by the Bausch & Lomb Optical Co., Rochester, N. Y., and will be sent to all who request it, mentioning this magazine. It gives tables explaining the use of different stop systems, image heights obtained at different distances, angles of view, hyperfocal distances, shutter speeds for moving objects, etc. Send a postal card for a copy today.

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SPEED F: 6.3 — F: 7.7

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one of these lenses, or write us regard-  
ing the particular lens for your camera*

## Bausch & Lomb Optical Co.

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## An Open Letter to the Photographic Fraternity

*Gentlemen :*

SOMETIMES every day, and then again a week or two apart, the mail brings Mr. Ives a request to address a gathering of photographers on the subject of color photography. So far as time and distance permit, Mr. Ives has found much pleasure in complying as well as stimulus in the interest that photographers everywhere have brought to the subject of his lifetime study: Photography in Color.

Where Mr. Ives cannot go personally, or we can only occasionally send a representative, the enterprising journalist does visit you regularly. To him we shall therefore entrust a monthly message telling you about color photography in general and in detail. We shall try to make this sufficiently interesting to warrant your searching the pages of this journal for it.

Now just what is a color photograph?

It is not a photographic print in black and white or in delicate grays tinted with water colors or oils; no more so than such tinted print would rank as a painting in water or oils.

It is not a transparency, whether viewed in front of a light or in a mirror frame, though a screen plate transparency is a nearer approach, as its color is largely due to the action of light on the plate in the camera; but such transparencies no more cover the field of color photography than lantern-slide positives cover that of monochrome photography.

Though Mr. Ives himself originated transparency color photography over twenty-five years ago with his triple projection lantern and his chromoskope and later with the more flexible film transparency complete in itself, these all were but stepping-stones to that ultimate goal: a color photograph which responds alike to the demands of the public and to the requirements of the photographer as an artist and as a business man; this means:

The color photograph must be viewable by direct light, like any other picture; it must be true; it must be capable of reproduction in any desired quantity and in all regular plate sizes. The process must be definite and yet under full control for variations of hue, light and shade; it must be simple enough and sufficiently kin to ordinary photographic working to be readily acquired; it must permit the artist in posing, in lighting and in retouching and "working up," to express himself fully; no investment in special apparatus must be called for.

This has been the goal, and this has been finally reached.

Photography in Color—Hicrography—is now yours to introduce to your discriminating patrons.

Respectfully,

THE HESS-IVES CORPORATION

1205 Race Street,  
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October 16, 1916.



President

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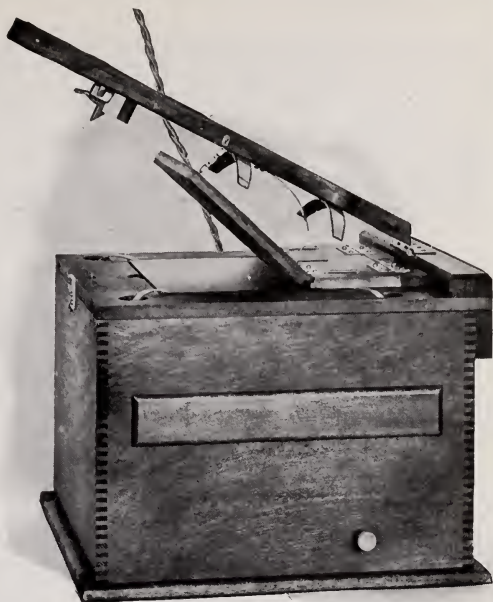
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The Crown Printer is made in two sizes, 8 x 10 and 11 x 14.

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and  
convenient  
as larger  
printers—  
and more  
economical.*



## The No. 1 Eastman Printer

should be a part of the equipment of every studio. It accommodates 5 x 7 and smaller negatives, the printing glass being 8 x 8 inches square. The printer is operated by a hand lever which operates the back and brings the paper in perfect contact with the negative before it switches the lights on and locks. Releasing the lever turns off the white lights but leaves the red light burning. Two 60 Watt Mazda lamps (not furnished) give ample illumination and the blocks on which they are mounted have a sliding and rack and pinion movement which permits of almost any adjustment of the light. A removable panel in the side of box permits a ground glass to be slid into grooves to diffuse the light. The printer is constructed of hard wood, and the best of metal is used for working parts, all of which are heavily nicked. The price, including ruby globe and electric cord with plug to fit any ordinary socket, \$10.00.

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It's a fabric coated with a photographic emulsion and works in every way like a bromide paper.

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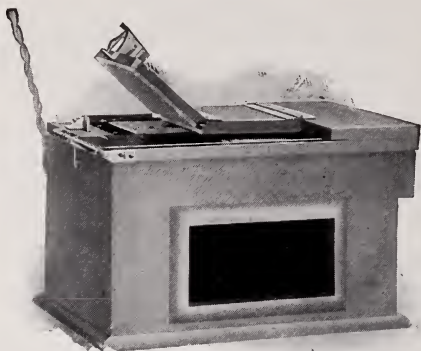
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differ from ordinary en-  
largements. They retain  
the contact quality.



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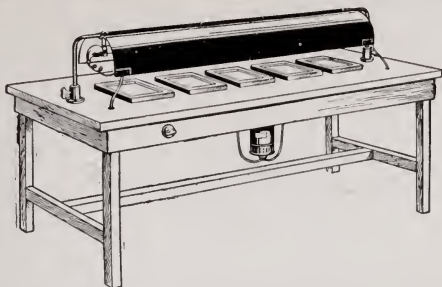
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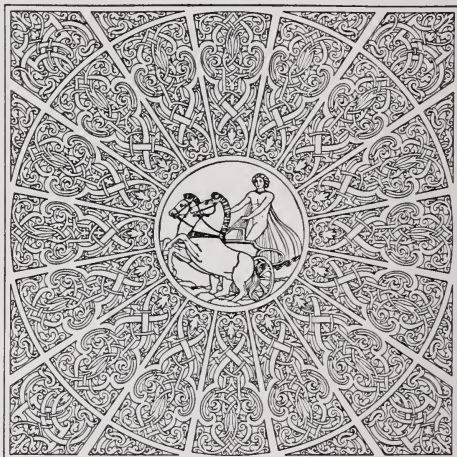
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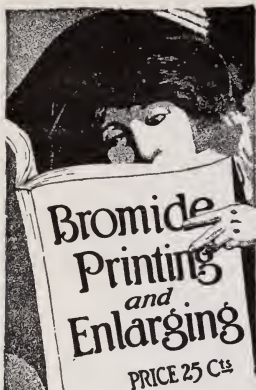
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